ORIGINAL RESEARCH

Effect of inpatient experiences on patient satisfaction and the willingness to recommend a hospital: The mediating role of patient satisfaction: A cross-sectional study

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Abstract

Background and Aims: As high-quality health care encompasses patient-centered care, this study used the perceived quality–satisfaction–behavioral intention and structure-process-outcome models to (1) investigate the relationships among patient experience, patient satisfaction, and the willingness to recommend a hospital and (2) estimate the indirect effects of patient satisfaction on the relationship between patient experience and the willingness to recommend a hospital.

Methods: A cross-sectional survey design was adopted to investigate data obtained from the Seoul National University Hospital Patient Experience survey administered in 2020. Responses were analyzed from 1555 patients, who had been admitted to the inpatient ward of a tertiary hospital for a period lasting more than 1 day.

Results: The path model demonstrated a good fit to the relationships between patient experience, patient satisfaction, and the willingness to recommend the hospital. Patient experience directly influenced patient satisfaction ($\beta = 0.659$, $p < 0.001$) and the willingness to recommend the hospital ($\beta = 0.168$, $p < 0.001$), whereas patient satisfaction had an indirect effect ($\beta = 0.418$, $p < 0.001$) on the relationship between patient experience and the willingness to recommend the hospital.

Conclusion: Patient experience is a critical factor that health care systems need to consider for enhancing patient-centeredness, patient satisfaction, and the willingness to recommend a hospital.

KEYWORDS
delivery of health care, health care surveys, patient-centered care, patient rights, patient satisfaction, quality of health care

1 | INTRODUCTION

Patient-centered care is a critical component of high-quality health care.[1] As the treatment paradigm continues to shift from a disease-centered to a patient-centered approach,[2] health care systems have gradually increased their focus on patients and their needs.[3,4] Specifically, patient-centered care involves being "respectful of, and responsive to individual patient preferences, needs, and values, and ensuring that patient values guide all clinical decisions."[1] The level of patient-centeredness in health care systems can be assessed by surveying patients to ascertain their experience,[5] including their interactions with providers, the facilities visited, and the core elements of the treatment process.[6] Previous reviews indicate that patient experience is positively correlated with both clinical effectiveness and patient safety, as well as with treatment adherence and self-reported health and well-being.[6,7]

Patient experience may be important not only in terms of patient-centeredness and patient safety but also as a key factor influencing the financial status of health care systems. Indeed, evidence suggests that positive perceptions of service quality affect patient satisfaction, which mediates customer loyalty, thereby highlighting the importance of quality improvement programs for sustaining business in healthcare systems.[8,9] The concept of "willingness to recommend" is also connected to behavioral intentions (also known as patient loyalty), as it can predict the intention to revisit a hospital and is affected by patients' perceptions of care quality as well as their relationships with medical professionals.[10]

Evidence suggests that patient satisfaction is influenced by several person-related characteristics and care outcomes[11] and is also related to treatment compliance.[12] In Donabedian's approach to evaluating the quality of health care, the assessment of patient experience is based on aspects of structure and process, and the assessment of patient satisfaction is based on outcomes.[13] Within this structure-process-outcome (SPO) framework, good patient experiences lead to good behavioral outcomes, which affect treatment compliance as well as patient satisfaction.

Patient satisfaction and patient experience are closely related, albeit distinct concepts.[6,14] Although they have been used interchangeably, distinguishing between them is important.[14,15] Patient satisfaction considers patients' expectations regarding healthcare, whereas patient experience is more closely related to how patients perceive the services in health care settings.[16] Specifically, patient experience is a complex construct that is typically defined by patients' perceived interactions with various providers across the care continuum.[17]

Many countries have attempted to evaluate patient experience by conducting nationwide surveys.[18–21] Moreover, survey results regarding patient experience have been utilized as a metric for determining healthcare reimbursements.[15] For example, the Hospital Consumer Assessment of Healthcare Providers and Systems is an approved scale for measuring patient experience in the United States and an important indicator in the Value-Based Purchasing program.[22]

In the United Kingdom, patient experience has been measured through the National Health Service Patient Survey Program, and the results are publicly available.[23]

Similarly, a survey that measures patient experience has been conducted in Korea on a biennial basis since 2017, thus promoting a patient-centered medical culture.[24] Surveys were conducted in hospitals with over 500, 300, and 100 beds in 2017, 2019, and 2021, respectively.[24] The Health Insurance Review and Assessment Service publicly releases the survey results and plans to expand the number of surveyed hospitals in the future. In addition, the survey results were used on a pilot basis in the 2020 Health care Quality Index,[25] thereby indicating the importance of patient experience in the Korean health care system.

As patient experience has become increasingly important, this study (1) investigated the relationships among patient experience, patient satisfaction, and the willingness to recommend a hospital based on both the perceived quality–satisfaction–behavioral intention and the SPO models and (2) estimated the indirect effects of patient satisfaction on the relationship between patient experience and the willingness to recommend a hospital.

2 | METHODS

2.1 | Study participants

This study utilized a cross-sectional design to analyze data from the Seoul National University Hospital Patient Experience survey that was conducted from August 20 to November 23, 2020. A continuous sampling method was used to survey patients in all the hospital wards. The sample included patients who were admitted for periods lasting more than a day during the survey period but excluded psychiatric ward patients, deceased patients, and those visiting from other countries. In total, 1555 patients responded to the survey. The study was conducted in accordance with the Declaration of Helsinki and approved by the Institutional Review Board of the Seoul National University Hospital. Informed consent was obtained from all the participants involved in the study.

2.2 | Measures

Using an instrument developed by Do in 2017,[26] patient experience was measured by 24 items across six sub-domains: communication with doctors, communication with nurses, communication related to medicines/treatment, guaranteed patient rights, hospital environment, and ease of admission and discharge procedures. A detailed description of the tool is provided in the original report.[26] Communication with doctors included six items: the opportunity to meet with and talk to doctors, doctors' respect/courtesy, listening, provision of easy-to-understand explanations, provision of rounding time information, and observance of rounding time (range: 1–4). Communication with nurses included five items: trust in nursing procedures, nurses' respect/

courtesy, listening, provision of easy-to-understand explanations, and efforts to handle requests for help (range: 1–4). Communication related to medicine/treatment included five items: provision of easy-to-understand explanations for administering medication, provision of easy-to-understand explanations of potential side effects of medication/examination/treatment, provision of comfort/empathy, pain control efforts (range: 1–4), and provision of information on precautions and treatment plans after discharge (0 = no, 1 = yes). Guaranteed patient rights included four items: fair treatment, ease of complaints, right to privacy/confidentiality, and the opportunity to participate in the treatment decision process (range: 1–4). Hospital environment included two items relating to cleanliness and safety (range: 1–4). Ease of admission and discharge procedures included two items: one each for admission and discharge (range: 1–4). Higher scores indicated more agreement with each item.

Patient satisfaction was measured through an overall rating of patients' hospitalization on a scale of 0–10, ranging from "the worst" to "the best." Willingness to recommend the hospital was measured using the following question: "How would you rate your willingness to recommend the hospital to family or acquaintances who need treatment?" Ratings were recorded on a scale of 0–10, ranging from "not recommended" to "highly recommended."

Finally, covariates included the following: age (years), sex (male, female), self-assessed health outcome (range: 1–5), patient-reported health outcomes (range: 1–5), length of stay (days), residence area, hospitalization via emergency room (yes/no), complications during hospitalization (yes/no), and type of inpatient department (internal medicine/surgical).

2.3 | Statistical analysis

Descriptive statistics were used to describe the sample characteristics and test the data's normality. In addition, t-tests and F-tests were performed to identify the differences in patient satisfaction according to the general characteristics. Factors affecting patient satisfaction were analyzed using multiple regression. Structural equation modeling was used to analyze the relationships between patient experience, patient satisfaction, and the willingness to recommend a hospital. Consistent with previous systematic research,[10,11,27] covariates were assessed to control for dependent variables in the path analysis model. Maximum likelihood estimation with robust standard errors was performed to protect against the non-normal distribution of the dependent variables and, more precisely, to estimate the standard errors.[28,29] The Sobel test was conducted to confirm the statistical significance of indirect effects. Model fit was evaluated based on the χ^2 test, comparative fit index (CFI), Tucker–Lewis index (TLI), and root mean square error of approximation (RMSEA). All descriptive analyses were conducted using IBM SPSS version 25.0, while the path models were estimated using Mplus version 8.6.

3 | RESULTS

3.1 | Participant characteristics

Table 1 shows the descriptive characteristics of the 1555 participants (51.8% women and 48.2% men) and results of univariate analysis on patient satisfaction. Patient satisfaction was higher in participants without complications during hospitalization than in participants with complications ($t = 3.41$, $p < 0.001$). The mean scores for self-assessed health status and patient-reported health outcomes were 3.35 (standard deviation [SD] = 0.99) and 3.95 (SD = 0.73), respectively. The mean scores of each composite of the inpatient experience were as follows: 3.33 (SD = 0.58) for communication with doctors, 3.62 (SD = 0.49) for communication with nurses, 3.50 (SD = 0.53) for communication about medicines/treatment, 3.38 (SD = 0.53) for guaranteeing patient rights, 3.26 (SD = 0.62) for hospital environment, and 3.35 (SD = 0.58) for ease of admission and discharge procedures. Item factor structure of patient experience and item score by inpatient department type are presented as Supporting information (Supporting information: Tables 1 and 2).

3.2 | Factors affecting patient satisfaction

The multiple regression analysis (Table 2) showed that the inpatient experience factors that affected patient satisfaction were communication with doctors ($t = 7.662$, $p < 0.001$), communication with nurses ($t = 4.124$, $p < 0.001$), communication about medicines/treatment ($t = 4.738$, $p < 0.001$), hospital environment ($t = 6.336$, $p < 0.001$), and ease of admission and discharge procedures ($t = 4.413$, $p < 0.001$). The variance inflation factor was less than 10, which means that multicollinearity was not an issue.

3.3 | Relationships between inpatient experience, patient satisfaction, and the willingness to recommend a hospital

The path model demonstrated a good fit for describing the relationships among patient experience, patient satisfaction, and the willingness to recommend a hospital (CFI = 0.917, TLI = 909, RMSEA = 0.048). Figure 1 and Table 3 present the results of the path model. As shown, patient experience had a significant effect on both patient satisfaction ($\beta = 0.659$, $p < 0.001$) and the willingness to recommend a hospital ($\beta = 0.168$, $p < 0.001$). In addition, patient satisfaction had an indirect effect ($\beta = 0.418$, $p < 0.001$) on the relationship between patient experience and the willingness to recommend a hospital. Among the covariates of patient satisfaction, age ($\beta = 0.112$, $p < 0.001$), self-assessed health status ($\beta = 0.092$, $p < 0.001$), and patient reported health outcomes ($\beta = 0.050$, $p = 0.048$) were significantly related to

TABLE 1 Difference in patient satisfaction by participant characteristics (N = 1555)

Variables	Categories	M ± SD or n (%)	M ± SD of PS	t or F-Value	p Value
Age (years)		48.78 ± 22.92			
	≤19	258 (16.6)	8.24 ± 1.75	1.24	0.293
	20–39	193 (12.4)	8.26 ± 1.86		
	40–64	672 (43.2)	8.43 ± 1.66		
	≥65	432 (27.8)	8.44 ± 1.72		
Sex	Male	750 (48.2)	8.46 ± 1.67	1.78	0.075
	Female	805 (51.8)	8.30 ± 1.76		
Self-assessed health status (range: 1–5)		3.35 ± 0.99			
Length of stay (days)		5.11 ± 4.96			
	≤5	1062 (68.3)	8.37 ± 1.73	0.716	0.542
	6–10	326 (21.0)	8.48 ± 1.70		
	11–15	85 (5.5)	8.24 ± 1.63		
	≥16	82 (5.3)	8.28 ± 1.83		
Residence area	Metropolitan area	1065 (68.5)	8.37 ± 1.72	−0.16	0.872
	Provinces/others	490 (31.5)	8.39 ± 1.72		
Hospitalization via emergency room	Yes	281 (18.1)	8.23 ± 1.72	1.63	0.103
	No	1274 (81.9)	8.41 ± 1.72		
Complications during hospitalization	Yes	133 (8.6)	7.89 ± 1.84	3.41	<0.001
	No	1422 (91.4)	8.42 ± 1.70		
Previous hospitalization in this hospital within the last year	Once (first visit)	875 (56.3)	8.53 ± 1.42	3.94	<0.001
	More than two times	680 (43.7)	8.18 ± 1.83		
Previous hospitalization in other tertiary hospitals	Yes	567 (36.5)	8.32 ± 1.78	1.05	0.296
	No	988 (63.5)	8.41 ± 1.69		
Type of inpatient department	Internal medicine	652 (41.9)	8.21 ± 1.77	−3.22	<0.001
	Surgical unit	903 (58.1)	8.50 ± 1.67		
Patient-reported health outcomes (range: 1–5)		3.95 ± 0.73			
Patient experience subdomains (range: 1–4)					
Communication with doctors		3.33 ± 0.58			
Communication with nurses		3.62 ± 0.49			
Communication about medicines/treatment		3.50 ± 0.53			
Guaranteeing patient rights		3.38 ± 0.53			
Hospital environment		3.26 ± 0.62			
Ease of admission and discharge procedures		3.35 ± 0.58			
Patient satisfaction (range: 0–10)		8.38 ± 1.72			
Willingness to recommend a hospital (range: 0–10)		8.32 ± 1.66			

Abbreviations: M, mean; PS, patient satisfaction; SD, standard deviation.

patient satisfaction. Meanwhile, the covariates of patient reported health outcomes ($\beta = 0.099$, $p < 0.001$), residence area ($\beta = 0.037$, $p = 0.023$), and the type of inpatient department ($\beta = -0.043$, $p = 0.014$) had significant relationships with the willingness to recommend a hospital. A second-order confirmatory factor analysis indicated that the six subdomains of patient experience loaded on the appropriate factors, with loadings ranging from 0.667 to 0.963.

TABLE 2 Factors affecting patient satisfaction

Variables	B	SE	β	t	p
(Constant)	−1.240	0.296		−4.183	<0.001
Communication with doctors	0.697	0.091	0.230	7.662	<0.001
Communication with nurses	0.398	0.096	0.113	4.124	<0.001
Communication about medicines/treatment	0.522	0.110	0.160	4.738	<0.001
Guaranteeing patient rights	0.117	0.110	0.036	1.065	0.287
Hospital environment	0.412	0.065	0.148	6.336	<0.001
Ease of admission and discharge procedures	0.322	0.073	0.108	4.413	<0.001
Age	0.007	0.001	0.095	5.044	<0.001
Sex (Ref. Male)	−0.093	0.065	−0.027	−1.443	0.149
Self-assessed health status	0.116	0.041	0.067	2.866	0.004
Patient reported health outcomes	0.133	0.054	0.056	5.458	0.014
Length of stay	−0.006	0.007	−0.017	−0.900	0.368
Residence area (Ref. Metropolitan area)	−0.106	0.069	−0.029	−1.549	0.122
Hospitalization via emergency room (Ref. No)	0.016	0.087	0.004	0.186	0.852
Complications during hospitalization (Ref. No)	−0.072	0.117	−0.012	−0.616	0.538
Type of inpatient department (Ref. IM)	0.121	0.069	0.035	1.757	0.079

Adj. R^2 = 0.481, F = 97.140, $p \leq 0.001$

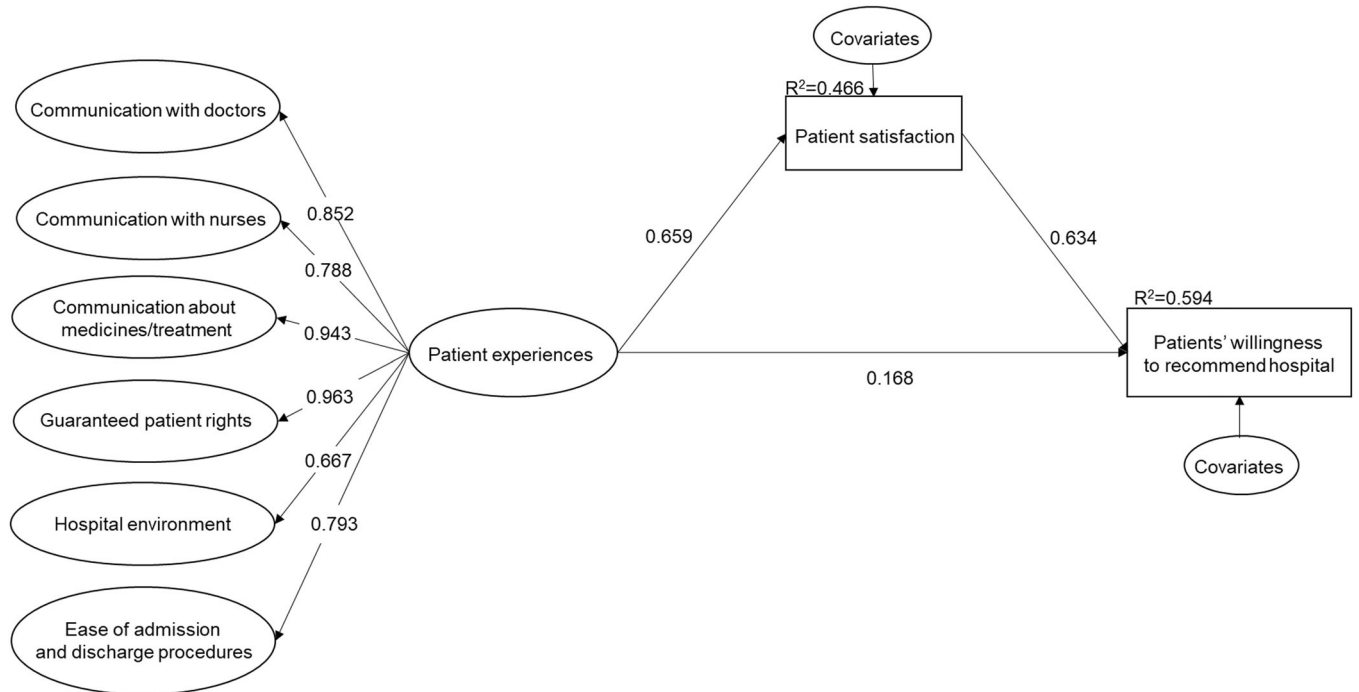Abbreviations: Adj, adjusted; IM, internal medicine; SE, standard error.

FIGURE 1 Relationship between inpatient experiences, patient satisfaction, and the willingness to recommend a hospital. Item values loaded in each subdomain were excluded for model parsimony. All paths were statistically significant ($p < 0.001$). All coefficients were standardized. The covariates for patient satisfaction and patient willingness to recommend include the following: age, sex, length of stay, self-rated health status, patient reported health outcome, hospitalization via emergency room, complications during hospitalization, type of inpatient department, and residence area. Model fit indices were as follows: χ^2 = 2343.973 ($p < 0.001$), CFI = 0.917, TLI = 0.909, RMSEA = 0.048.

TABLE 3 Results of the path models (N = 1555)

Model path	β (SE)	p
Total effect from inpatient experiences to the willingness to recommend the hospital	0.586 (0.027)	<0.001
Direct effect		
Inpatient experiences → willingness to recommend the hospital	0.168 (0.039)	<0.001
Indirect effect		
Inpatient experiences → patient satisfaction → willingness to recommend the hospital	0.418 (0.032)	<0.001
Direct effect to patient satisfaction		
Inpatient experiences → patient satisfaction	0.659 (0.026)	<0.001
Age → patient satisfaction	0.112 (0.021)	<0.001
Sex → patient satisfaction	−0.027 (0.019)	0.159
Self-assessed health status → patient satisfaction	0.092 (0.027)	<0.001
Patient reported health outcomes → patient satisfaction	0.050 (0.025)	0.048
Length of stay → patient satisfaction	−0.011 (0.020)	0.591
Residence area → patient satisfaction	−0.028 (0.020)	0.150
Hospitalization via emergency room → patient satisfaction	0.006 (0.019)	0.742
Complications during hospitalization → patient satisfaction	−0.015 (0.021)	0.455
Type of inpatient department	0.031 (0.022)	0.148
Direct effect to the willingness to recommend the hospital		
Age → willingness to recommend the hospital	0.007 (0.017)	0.657
Sex → willingness to recommend the hospital	0.008 (0.017)	0.614
Self-assessed health status → willingness to recommend the hospital	0.012 (0.023)	0.593
Patient reported health outcomes → willingness to recommend the hospital	0.099 (0.024)	<0.001
Length of stay → willingness to recommend the hospital	0.004 (0.020)	0.842
Residence area → willingness to recommend the hospital	0.037 (0.016)	0.023
Hospitalization via emergency room → willingness to recommend the hospital	−0.005 (0.016)	0.758
Complications during hospitalization → willingness to recommend the hospital	−0.002 (0.016)	0.915
Type of inpatient department → willingness to recommend the hospital	−0.043 (0.018)	0.014

Note: Values are standardized coefficients.

Abbreviation: SE, standard error.

4 | DISCUSSION

This study investigated the relationships among patient experience, patient satisfaction, and the willingness to recommend a hospital. It found that patient experience directly influenced patient satisfaction and the willingness to recommend a hospital. Moreover, patient satisfaction had an indirect effect on the relationship between patient experience and the willingness to recommend a hospital. These results suggest that patient-reported experiences are critical factors in patient satisfaction and influence whether patients are willing to recommend hospitals where they receive treatment. Specifically, better experiences result in higher satisfaction, which lead to the intention to recommend a hospital, or what is often referred to as "recommend intention."

These findings are consistent with previous studies showing that high perceptions of service quality are significantly associated with high patient satisfaction[8,9,30,31] and increased loyalty.[8,9] Owing to the mediating effect of patient satisfaction, high perceptions of service quality result in improved recommendation intentions.[9] In a similar study, the dependent variable of behavioral intention was subcategorized as revisit intention and word-of-mouth intention, both of which were influenced by patient satisfaction.[31] Evidence also suggests that patient satisfaction has an indirect effect on the relationship between patient experience and loyalty.[8,30] While some researchers offer different perspectives on the mediating effects of satisfaction on service quality and behavior intentions,[32] both the current results and much of the literature suggest that patient satisfaction is an

important mediator in the relationship between patient experience and the willingness to recommend a hospital.

This study found that guaranteeing patient rights had the greatest value among the subdomains of patient experience. Thus, care providers should prioritize fair treatment, ease of complaints, opportunities to participate in the treatment decision process, and confidentiality/privacy. Several studies also suggest that the subdomains of patient experience have varying effects on patient satisfaction[30,33,34] and recommendation intentions.[35] In particular, communication with nurses is a determinant of patient satisfaction.[34,36] This finding highlights the importance of ensuring that nurses provide good communication, as higher patient satisfaction has been shown to affect adherence to medication and the treatment process.[30] This result is consistent with those of a study that showed that doctors' service is important for inpatient satisfaction.[37] However, another study indicated that if a patient trusted both the nurses and doctors, the satisfaction rate was high.[38] Therefore, the human factors related to medical service providers may be considered important. Similarly, there is evidence that good interpersonal care positively affects patient satisfaction and treatment adherence.[39-42] Based on these findings, providers should implement patient-centered care models during the treatment process to enhance patient experience, which, in turn, influences patient satisfaction and the willingness to recommend a hospital.

General patient factors may also affect patient satisfaction and the willingness to recommend a hospital. By controlling for general patient factors, this study found that patient experience influenced patient satisfaction and willingness to recommend a hospital. In particular, the perceived quality of health care influences whether patients are willing to recommend a hospital through the indirect effects of patient satisfaction, which plays a mediating role. Indeed, satisfaction indexes are important factors to consider when assessing economic issues in the field of marketing,[43] with both satisfaction and the willingness to recommend a hospital often used as predictors for customer revisitation intentions.[44] In this study, patients with high satisfaction were more likely to recommend hospitals to their families and others. Word-of-mouth recommendations are also important factors in marketing.[45] In the healthcare context, customer satisfaction influences word-of-mouth recommendations, as well as the intention to purchase.[46] Given that customer perceptions of quality behave as antecedents of customer satisfaction, patient experience has important implications for hospital administrators, who are responsible for management decisions. From a business perspective, patient experience should be considered as important as advanced medical technology.

Although some may believe that patient experience surveys represent subjective feelings, studies have consistently shown that well-measured patient experiences reflect the actual quality of care.[47] In recent years, measuring and interpreting patient experience data to improve healthcare quality have become increasingly important.[48] Health care providers can also distinguish themselves within the healthcare industry by adjusting their practices to enhance patient satisfaction based on patient experience research.[49] Patient experience is meaningful because it develops through participation with patients, which reflects patient-centeredness throughout the healthcare system.[50,51]

This study also had some limitations. First, the survey was conducted at only one tertiary hospital, which did not allow for comparisons between hospital types. Owing to differences in regional practices, patient severity, and hospital policies, generalizability was also limited. Second, the large number of non-responses could reflect potential problems with the web-based survey.[52] As responses were provided via a mobile device, participants required an appropriate access method. Owing to this, many individuals in vulnerable groups (e.g., older adults) did not respond because they were unfamiliar with the mobile survey method. Third, the cross-sectional approach prevented the establishment of causality. Future research should consider a model in which patient recovery is included as an outcome.

5　|　CONCLUSIONS

Patient experience surveys are effective tools for estimating healthcare quality and are becoming increasingly popular for measuring patient-centeredness in healthcare systems. This study found clear relationships among patient experience, patient satisfaction, and the willingness to recommend a hospital, with patient satisfaction showing an indirect effect on the relationship between patient experience and the willingness to recommend a hospital. The results demonstrate the critical importance of patient satisfaction for enhancing the patient-centered approach to health care.

AUTHOR CONTRIBUTIONS

Hye Na Park: Conceptualization; Data curation; Formal analysis; Funding acquisition; Methodology; Visualization; Writing – original draft. **Do Joong Park**: Conceptualization; Investigation; Supervision; Writing – review & editing. **Se Young Han**: Conceptualization; Formal analysis; Methodology; Visualization; Writing – original draft. **Ji Yeon Tae**: Conceptualization; Formal analysis; Methodology; Visualization; Writing – original draft. **Keun-Hwa Jung**: Conceptualization; Formal analysis; Methodology; Software; Writing – original draft. **Eun Jung Bae**: Conceptualization; Methodology; Validation; Writing – original draft. **Ju Young Yoon**: Conceptualization; Project administration; Supervision; Validation; Writing – review & editing. All authors have read and approved the final version of the manuscript.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions. Ju Young Yoon had full access to all of the data in this study and takes complete responsibility for the integrity of the data and the accuracy of the data analysis.

ETHICS STATEMENT

The study was conducted in accordance with the Declaration of Helsinki, and approved by the Institutional Review Board of Seoul National University Hospital (IRB No. E-2105-065-1218). Informed consent was obtained from all participants involved in the study. All authors agreed to the submission of this manuscript for publication.

TRANSPARENCY STATEMENT

The lead author Ju Young Yoon affirms that this manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant, registered) have been explained.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.